WHAT IS CLAIMED IS:

1. A hydrophobic composite comprising a core material coated by a hydrophobic powder, said hydrophobic powder includes at least one impure element having a hydrocarbon chain attached thereto.

2. The hydrophobic composite of claim 1, wherein said hydrocarbon chain comprises at least 10 carbon atoms.

3. The hydrophobic composite of claim 1, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

4. The hydrophobic composite of claim 3, wherein said hydrocarbon is a residue of a fatty acid having at least 12 carbon atoms.

5. The hydrophobic composite of claim 4, wherein said fatty acid is selected from the group consisting of stearic acid, lauric acid, myristic acid, palmitic acid, oleic acid, linolenic acid and arachidonic acid.

6. The hydrophobic composite of claim 1, wherein said element is selected from the group consisting of a metallic element, a semi-metallic element and a transition metallic element.

7. The hydrophobic composite of claim 1, wherein said at least one element is selected from the group consisting of magnesium, calcium, aluminum, zinc, sodium, barium, zirconium, manganese, titanium, vanadium, chromium, iron and combinations thereof.

8. The hydrophobic composite of claim 1, wherein said hydrophobic powder has an average particle size ranging between 0.02 micron and 50 microns.

9. The hydrophobic composite of claim 1, wherein said hydrophobic powder has a surface area ranging between 1 m^2/gram and 60 m^2/gram.

10. The hydrophobic composite of claim 1, characterized as being inactive toward alkaline reagents.

11. The hydrophobic composite of claim 1, being capable of preventing water adherence thereto and water penetration therein under an external pressure of up to about 4.5 atmospheres.

12. The hydrophobic composite of claim 1, characterized by being durable to dynamic water wear for at least 2 months.

13. The hydrophobic composite of claim 1, wherein said hydrophobic powder is bonded to said core material via an adherent layer.

14. The hydrophobic composite of claim 1, wherein said core material is selected from the group consisting of a particulate material and a granulate material.

15. The hydrophobic composite of claim 1, wherein said core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

16. The hydrophobic composite of claim 14, wherein said core material has an average particle size ranging between 25 millimeters and 5 microns.

17. The hydrophobic composite of claim 15, wherein said core material is quartz sand.

18. The hydrophobic composite of claim 13, wherein said adherent layer is a water-based adherent layer.

19. The hydrophobic composite of claim 18, wherein said water-based adherent layer comprises a water-based gluing agent.

20. The hydrophobic composite of claim 13, wherein said adherent layer comprises a film-forming agent.

21. The hydrophobic composite of claim 20, wherein said film forming agent is a film forming polyurethane.

22. The hydrophobic composite of claim 20, wherein said adherent layer further comprises a gluing agent.

23. The hydrophobic composite of claim 20, wherein said gluing agent is a volatile hydrocarbon having at least 12 carbon atoms.

24. The hydrophobic composite of claim 23, wherein said gluing agent is selected from the group consisting of liquid asphalt, paraffin wax, beeswax, lanolin wax, linseed oil and combinations thereof.

25. The hydrophobic composite of claim 22, wherein said gluing agent constitutes between about 0.1 and about 50 weight percentages of said adherent layer.

26. The hydrophobic composite of claim 1, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

27. The hydrophobic composite of claim 26, wherein said hydrophobic fumed silica constitutes between 1 and 99 weight percentages of said hydrophobic powder.

28. The hydrophobic composite of claim 13, wherein said adherent layer constitutes between about 0.5 and about 7 weight percentages of the hydrophobic composite.

29. The hydrophobic composite of claim 1, wherein said hydrophobic powder constitutes between about 0.1 and about 5 weight percentages of the hydrophobic composite.

30. The hydrophobic composite of claim 26, wherein said hydrophobic powder constitutes between about 0.1 and about 5 weight percentages of the hydrophobic composite.

31. The hydrophobic composite of claim 1, further comprising at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

32. The hydrophobic composite of claim 31, wherein said coloring agent constitutes between about 0.1 and about 2 weight percentages of the hydrophobic composite.

33. The hydrophobic composite of claim 31, wherein said UV resistant agent and said bleaching agent each constitutes between about 0.01 and about 2 weight percentages of the hydrophobic composite.

34. The hydrophobic composite of claim 31, wherein said abrasive agent constitutes between about 0.1 and about 0.5 weight percentages of the hydrophobic composite.

35. A method of preparing a hydrophobic composite, the method comprising coating a core material with a hydrophobic powder, said hydrophobic powder includes at least one impure element having a hydrocarbon chain attached thereto, to thereby provide the hydrophobic composite.

36. The method of claim 35, further comprising, prior to said coating, applying onto said core material an adherent layer, said adherent layer bonding said hydrophobic powder to said core material.

37. The method of claim 36, wherein said adherent layer comprises a film-forming agent and said step of applying onto said core material an adherent layer comprises admixing said core material with an adherent mixture containing said film-forming agent and a volatile solvent, while removing all of said volatile solvent from

the mixture of said core material and said adherent mixture, to thereby provide said core material having applied thereon said adherent layer.

38. The method of claim 36, wherein said adherent layer comprises a water-based gluing agent and said step of applying onto said core material an adherent layer comprises admixing said core material with an aqueous adherent mixture containing said water-based gluing agent and an aqueous solvent, while removing all of said aqueous solvent from said mixture of said core material and said adherent mixture, to thereby provide said core material having applied thereon said adherent layer.

39. The method of claim 38, wherein a concentration of said water-based gluing agent in said aqueous adherent mixture ranges between about 1 weight percentage and about 99 weight percentages.

40. The method of claim 35, further comprising drying said core material prior to said coating.

41. The method of claims 35, further comprising drying said core material prior to said admixing.

42. The method of claim 35, further comprising, after said coating, curing said hydrophobic composite.

43. The method of claim 42, wherein said curing is performed for a time period ranging between 1 and 30 days.

44. The method of claim 37, wherein said removing said volatile solvent is performed by evaporative heating.

45. The method of claim 37, wherein said removing said volatile solvent is performed at room temperature.

46. The method of claim 37, wherein said volatile solvent is an organic solvent having a boiling temperature ranging between about 80 °C and 200 °C.

47. The method of claim 38, wherein said aqueous solvent is water.

48. The method of claim 38, wherein removing said aqueous solvent is performed by tumble drying.

49. The method of claim 35, further comprising, prior to said coating, admixing said core material with an additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

50. The method of claim 37, further comprising, prior to said coating, admixing said core material having thereon said adherent layer with an additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

51. The method of claim 38, further comprising, prior to said coating, admixing said core material having thereon said adherent layer with an additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

52. The method of claim 35, wherein said core material is selected from the group consisting of a particulate material and a granulate material.

53. The method of claim 52, wherein said core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

54. The method of claim 52, wherein said core material has an average particle size ranging between 25 millimeters and 5 microns.

55. The method of claim 53, wherein said core material is quartz sand.

56. The method of claim 37, wherein said film forming agent is a film forming polyurethane.

57. The method of claim 37, wherein said adherent mixture further comprises a gluing agent.

58. The method of claim 57, wherein said gluing agent is a volatile hydrocarbon having at least 12 carbon atoms.

59. The method of claim 58, wherein said gluing agent is selected from the group consisting of liquid asphalt, paraffin wax, beeswax, lanolin wax, linseed oil and combinations thereof.

60. The method of claim 35, wherein said hydrophobic powder has an average particle size ranging between 0.02 micron and 50 microns.

61. The method of claim 35, wherein said hydrophobic powder has a surface area ranging between 1 m^2/gram and 60 m^2/gram.

62. The method of claim 35, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

63. The method of claim 62, wherein said hydrophobic fumed silica constitutes between 1 and 99 weight percentages of said hydrophobic powder.

64. The method of claim 37, wherein said adherent layer constitutes between about 0.5 and about 7 weight percentages of said hydrophobic composite.

65. The method of claim 35, wherein said hydrophobic powder constitutes between about 0.1 and about 5 weight percentages of said hydrophobic composite.

66. A hydrophobic particulate comprising a particulated core material coated by a hydrophobic powder, said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

67. The hydrophobic particulate of claim 66, wherein said hydrocarbon chain comprises at least 10 carbon atoms.

68. The hydrophobic particulate of claim 66, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

69. The hydrophobic particulate of claim 68, wherein said hydrocarbon is a residue of a fatty acid having at least 12 carbon atoms.

70. The hydrophobic particulate of claim 69, wherein said fatty acid is selected from the group consisting of stearic acid, lauric acid, myristic acid, palmitic acid, oleic acid, linolenic acid and arachidonic acid.

71. The hydrophobic particulate of claim 66, wherein said at least one element is selected from the group consisting of a metallic element, a semi-metallic element, a transition metallic element and combinations thereof.

72. The hydrophobic particulate of claim 66, wherein said at least one element is selected from the group consisting of magnesium, calcium, aluminum, zinc, sodium, barium, zirconium, manganese, titanium, vanadium, chromium, iron and combinations thereof.

73. The hydrophobic particulate of claim 66, wherein said hydrophobic powder has an average particle size ranging between 0.02 micron and 50 microns.

74. The hydrophobic particulate of claim 66, wherein said hydrophobic powder has a surface area ranging between 1 m^2/gram and 60 m^2/gram.

75. The hydrophobic particulate of claim 66, characterized as being inactive toward alkaline reagents.

76. The hydrophobic particulate of claim 66, being capable of preventing water adherence thereto and water penetration therein under an external pressure of up to about 4.5 atmospheres.

77. The hydrophobic particulate of claim 66, characterized by being durable to dynamic water wear for at least 2 months.

78. The hydrophobic particulate of claim 66, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

79. The hydrophobic particulate of claim 66, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

80. The hydrophobic particulate of claim 66, wherein said particulated core material has an average particle size ranging between 25 millimeters and 5 microns.

81. The hydrophobic particulate of claim 79, wherein said particulated core material is quartz sand.

82. The hydrophobic particulate of claim 78, wherein said adherent layer is a water-based adherent layer.

83. The hydrophobic particulate of claim 82, wherein said water-based adherent layer comprises a water-based gluing agent.

84. The hydrophobic particulate of claim 78, wherein said adherent layer comprises a film-forming agent.

85. The hydrophobic particulate of claim 84, wherein said film forming agent is a film forming polyurethane.

86. The hydrophobic particulate of claim 84, wherein said adherent layer further comprises a gluing agent.

87. The hydrophobic particulate of claim 84, wherein said gluing agent is a volatile hydrocarbon having at least 12 carbon atoms.

88. The hydrophobic particulate of claim 87, wherein said gluing agent is selected from the group consisting of liquid asphalt, paraffin wax, beeswax, lanolin wax, linseed oil and combinations thereof.

89. The hydrophobic particulate of claim 86, wherein said gluing agent constitutes between about 0.1 and about 50 weight percentages of said adherent layer.

90. The hydrophobic particulate of claim 66, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

91. The hydrophobic particulate of claim 90, wherein said hydrophobic fumed silica constitutes between 1 and 99 weight percentages of said hydrophobic powder.

92. The hydrophobic particulate of claim 78, wherein said adherent layer constitutes between about 0.5 and about 7 weight percentages of the hydrophobic particulate.

93. The hydrophobic particulate of claim 66, wherein said hydrophobic powder constitutes between about 0.1 and about 5 weight percentages of the hydrophobic particulate.

94. The hydrophobic particulate of claim 90, wherein said hydrophobic powder constitutes between about 0.1 and about 5 weight percentages of the hydrophobic particulate.

95. The hydrophobic particulate of claim 66, further comprising at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

96. The hydrophobic particulate of claim 95, wherein said coloring agent constitutes between about 0.1 and about 2 weight percentages of the hydrophobic particulate.

97. The hydrophobic particulate of claim 95, wherein said UV resistant agent and said bleaching agent each constitutes between about 0.01 and about 2 weight percentages of the hydrophobic particulate.

98. The hydrophobic particulate of claim 95, wherein said abrasive agent constitutes between about 0.1 and about 0.5 weight percentages of the hydrophobic particulate.

99. A method of preparing a hydrophobic particulate, the method comprising coating a particulated core material with a hydrophobic powder, said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto, to thereby provide the hydrophobic particulate.

100. The method of claim 99, further comprising, prior to said coating, applying onto said particulated core material an adherent layer, said adherent layer bonding said hydrophobic powder to said particulated core material.

101. The method of claim 100, wherein said adherent layer comprises a film-forming agent and said step of applying onto said particulated core material an adherent layer comprises admixing said particulated core material with an adherent mixture containing said film-forming agent and a volatile solvent, while removing all

of said volatile solvent from the mixture of said particulated core material and said adherent mixture, to thereby provide said particulated core material having applied thereon said adherent layer.

102. The method of claim 36, wherein said adherent layer comprises a water-based gluing agent and said step of applying onto said core material an adherent layer comprises admixing said core material with an aqueous adherent mixture containing said water-based gluing agent and an aqueous solvent, while removing all of said aqueous solvent from the mixture of said core material and said aqueous adherent mixture, to thereby provide said core material having applied thereon said adherent layer.

103. The method of claim 102, wherein a concentration of said water-based gluing agent in said adherent mixture ranges between about 1 weight percentage and about 99 weight percentages.

104. The method of claim 99, further comprising drying said particulated core material prior to said coating.

105. The method of claim 101, further comprising drying said particulated core material prior to said admixing.

106. The method of claim 99, further comprising, after said coating, curing said hydrophobic particulate.

107. The method of claim 106, wherein said curing is performed for a time period ranging between 1 and 30 days.

108. The method of claim 101, wherein said removing of said volatile solvent is performed by evaporative heating.

109. The method of claim 101, wherein said removing of said volatile solvent is performed at room temperature.

110. The method of claim 101, wherein said volatile solvent is an organic solvent having a boiling temperature ranging between about 80 °C and 200 °C.

111. The method of claim 102, wherein said aqueous solvent is water.

112. The method of claim 102, wherein said removing of said water is performed by tumble drying.

113. The method of claim 99, further comprising, prior to said coating, admixing said particulated core material with an additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

114. The method of claim 101, further comprising, prior to said coating, admixing said particulated core material having thereon said adherent layer with an additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

115. The method of claim 99, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

116. The method of claim 99, wherein said particulated core material has an average particle size ranging between 25 millimeters and 5 microns.

117. The method of claim 115, wherein said particulated core material is quartz sand.

118. The method of claim 101, wherein said film forming agent is a film forming polyurethane.

119. The method of claim 101, wherein said adherent mixture further comprises a gluing agent.

120. The method of claim 119, wherein said gluing agent is a volatile hydrocarbon having at least 12 carbon atoms.

121. The method of claim 120, wherein said gluing agent is selected from the group consisting of liquid asphalt, paraffin wax, beeswax, lanolin wax, linseed oil and combinations thereof.

122. The method of claim 99, wherein said hydrophobic powder has an average particle size ranging between 0.02 micron and 50 microns.

123. The method of claim 99, wherein said hydrophobic powder has a surface area ranging between 1 m^2/gram and 60 m^2/gram.

124. The method of claim 99, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

125. The method of claim 124, wherein said hydrophobic fumed silica constitutes between 1 and 99 weight percentages of said hydrophobic powder.

126. The method of claim 101, wherein said adherent layer constitutes between about 0.5 and about 7 weight percentages of said hydrophobic particulate.

127. The method of claim 99, wherein said hydrophobic powder constitutes between about 0.1 and about 5 weight percentages of said hydrophobic particulate.

128. A free-flowing hydrophobic aggregate capable of repealing a predetermined maximal pressure of liquid, the free-flowing hydrophobic aggregate comprising a plurality of differently sized particulates, wherein at least one of a size distribution of said particulates, a contact angle between the liquid and said particulates and a characteristic distance between adjacent particulates is selected so

that when a layer of the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to the predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

129. The free-flowing hydrophobic aggregate of claim 128, wherein the liquid is water.

130. The free-flowing hydrophobic aggregate of claim 128, wherein said layer has a thickness from about 1 cm to about 10 cm and further wherein the predetermined maximal pressure is equivalent to a column of water having a height above 30 cm.

131. The free-flowing hydrophobic aggregate of claim 128, wherein said layer has a thickness from about 1 cm to about 10 cm and further wherein the predetermined maximal pressure is equivalent to a column of water having a height above 100 cm.

132. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is characterized by a variance ranging from 1 micrometer to 1400 micrometer.

133. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the predetermined maximal pressure of the liquid.

134. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is from 1 nanometer to 500 nanometers.

135. The free-flowing hydrophobic aggregate of claim 128, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the liquid.

136. The free-flowing hydrophobic aggregate of claim 135, wherein an absorption capability of said inflatable particulates is from about 100 to about 5000 by weight.

137. The free-flowing hydrophobic aggregate of claim 135, wherein a freezing temperature of said inflatable particulates below about –20 degrees centigrade, both in an inflated state and in a deflated state of said inflatable particulates.

138. The free-flowing hydrophobic aggregate of claim 135, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

139. The free-flowing hydrophobic aggregate of claim 135, wherein a diameter of said inflatable particulates is from about 1 micrometer to about 1000 micrometers.

140. The free-flowing hydrophobic aggregate of claim 135, wherein said inflatable particulates comprise a super absorbent polymer.

141. The free-flowing hydrophobic aggregate of claim 135, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

142. The free-flowing hydrophobic aggregate of claim 135, wherein said inflatable particulates comprises anti-caking agent.

143. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

144. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal water absorption capability.

145. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

146. The free-flowing hydrophobic aggregate of claim 145, wherein said predetermined thermal properties are selected from the group consisting of thermal conductivity, specific heat capacity and latent heat.

147. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

148. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of the liquid.

149. The free-flowing hydrophobic aggregate of claim 128, wherein said size distribution is proportional to the predetermined maximal pressure.

150. The free-flowing hydrophobic aggregate of claim 128, wherein a cosine of said contact angle is proportional to the predetermined maximal pressure, said contact angle is measured from a tangent to a surface defined by the free-flowing hydrophobic aggregate.

151. The free-flowing hydrophobic aggregate of claim 128, wherein said characteristic distance is inversely proportional to the predetermined maximal pressure.

152. The free-flowing hydrophobic aggregate of claim 128, wherein said plurality of differently sized particulates comprises a particulated core material coated by a hydrophobic material selected so as to provide said contact angle.

153. The free-flowing hydrophobic aggregate of claim 152, wherein said hydrophobic material is a hydrophobic powder.

154. The free-flowing hydrophobic aggregate of claim 153, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

155. The free-flowing hydrophobic aggregate of claim 154, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

156. The free-flowing hydrophobic aggregate of claim 155, wherein said hydrocarbon is a residue of a fatty acid.

157. The free-flowing hydrophobic aggregate of claim 152, wherein said hydrophobic material is bonded to said particulated core material via an adherent layer.

158. The free-flowing hydrophobic aggregate of claim 152, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing the liquid.

159. The free-flowing hydrophobic aggregate of claim 158, wherein a diameter of said inflatable particulates is from about 1 micrometer to about 100 micrometers.

160. The free-flowing hydrophobic aggregate of claim 158, wherein an absorption capability of said inflatable particulates is from about 100 to about 5000 by weight.

161. The free-flowing hydrophobic aggregate of claim 158, wherein a freezing temperature of said inflatable particulates is below about –20 degrees centigrade, both in an inflated state and in a deflated state of said inflatable particulates.

162. The free-flowing hydrophobic aggregate of claim 158, wherein said inflatable particulates, when in a deflated state, constitute less than 1 percent of the free-flowing hydrophobic aggregate by volume.

163. The free-flowing hydrophobic aggregate of claim 158, wherein said inflatable particulates comprise a super absorbent polymer.

164. The free-flowing hydrophobic aggregate of claim 158, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

165. The free-flowing hydrophobic aggregate of claim 158, wherein said inflatable particulates comprises anti-caking agent.

166. The free-flowing hydrophobic aggregate of claim 152, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

167. The free-flowing hydrophobic aggregate of claim 157, wherein said adherent layer is a water-based adherent layer.

168. The free-flowing hydrophobic aggregate of claim 167, wherein said water-based adherent layer comprises a water-based gluing agent.

169. The free-flowing hydrophobic aggregate of claim 157, wherein said adherent layer comprises a film-forming agent.

170. The free-flowing hydrophobic aggregate of claim 169, wherein said adherent layer further comprises a gluing agent.

171. The free-flowing hydrophobic aggregate of claim 152, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

172. The free-flowing hydrophobic aggregate of claim 152, further comprising at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

173. A hydrophobic brick comprising a protective encapsulation having a predetermined shape, and a free-flowing hydrophobic aggregate being encapsulated in said protective encapsulation.

174. The hydrophobic brick of claim 173, wherein said protective encapsulation is made from a degradable material.

175. The hydrophobic brick of claim 173, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

176. The hydrophobic brick of claim 175, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

177. The hydrophobic brick of claim 175, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the liquid.

178. The hydrophobic brick of claim 177, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

179. The hydrophobic brick of claim 177, wherein said inflatable particulates comprise a super absorbent polymer.

180. The hydrophobic brick of claim 177, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

181. The hydrophobic brick of claim 177, wherein said inflatable particulates comprises anti-caking agent.

182. The hydrophobic brick of claim 175, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

183. The hydrophobic brick of claim 175, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

184. The hydrophobic brick of claim 175, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

185. The hydrophobic brick of claim 175, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

186. The hydrophobic brick of claim 175, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

187. The hydrophobic brick of claim 173, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

188. The hydrophobic brick of claim 187, wherein hydrophobic material is a hydrophobic powder.

189. The hydrophobic brick of claim 188, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

190. The hydrophobic brick of claim 189, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

191. The hydrophobic brick of claim 190, wherein said hydrocarbon is a residue of a fatty acid.

192. The hydrophobic brick of claim 187, wherein said hydrophobic material is bonded to said particulated core material via an adherent layer.

193. The hydrophobic brick of claim 187, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing liquid when being in contact therewith.

194. The hydrophobic brick of claim 193, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

195. The hydrophobic brick of claim 193, wherein said inflatable particulates comprise a super absorbent polymer.

196. The hydrophobic brick of claim 193, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

197. The hydrophobic brick of claim 193, wherein said inflatable particulates comprises anti-caking agent.

198. The hydrophobic brick of claim 187, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

199. The hydrophobic brick of claim 192, wherein said adherent layer is a water-based adherent layer.

200. The hydrophobic brick of claim 199, wherein said water-based adherent layer comprises a water-based gluing agent.

201. The hydrophobic brick of claim 192, wherein said adherent layer comprises a film-forming agent.

202. The hydrophobic brick of claim 201, wherein said adherent layer further comprises a gluing agent.

203. The hydrophobic brick of claim 187, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

204. The hydrophobic brick of claim 187, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

205. A method of waterproofing a portion of a structure being in contact with a ground, comprising:

providing a bed of a free-flowing hydrophobic aggregate; and

positioning said structure over or in said bed of said free-flowing hydrophobic aggregate.

206. The method of claim 205, further comprising protecting said bed of free-flowing hydrophobic aggregate by enclosing said bed in a protective structure.

207. The method of claim 205, wherein said bed of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic bricks, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

208. The method of claim 207, wherein said protective encapsulation is made from a degradable material.

209. The method of claim 205, wherein a thickness of said bed of free-flowing hydrophobic aggregate is between 1 and 15 cm.

210. The method of claim 205, wherein a thickness of said bed of free-flowing hydrophobic aggregate is between 4 and 10 cm.

211. The method of claim 205, further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

212. The method of claim 205, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

213. The method of claim 212, wherein said liquid is water.

214. The method of claim 212, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

215. The method of claim 212, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

216. The method of claim 215, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

217. The method of claim 215, wherein said inflatable particulates comprise a super absorbent polymer.

218. The method of claim 215, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

219. The method of claim 215, wherein said inflatable particulates comprises anti-caking agent.

220. The method of claim 212, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

221. The method of claim 212, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

222. The method of claim 212, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

223. The method of claim 212, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

224. The method of claim 212, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

225. The method of claim 205, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

226. The method of claim 225, wherein said hydrophobic material is a hydrophobic powder.

227. The method of claim 226, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

228. The method of claim 227, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

229. The method of claim 228, wherein said hydrocarbon is a residue of a fatty acid.

230. The method of claim 227, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

231. The method of claim 227, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

232. The method of claim 231, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

233. The method of claim 231, wherein said inflatable particulates comprise a super absorbent polymer.

234. The method of claim 231, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

235. The method of claim 231, wherein said inflatable particulates comprises anti-caking agent.

236. The method of claim 226, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

237. The method of claim 230, wherein said adherent layer is a water-based adherent layer.

238. The method of claim 237, wherein said water-based adherent layer comprises a water-based gluing agent.

239. The method of claim 230, wherein said adherent layer comprises a film-forming agent.

240. The method of claim 239, wherein said adherent layer further comprises a gluing agent.

241. The method of claim 227, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

242. The method of claim 226, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

243. A method of waterproofing an underground wall of a structure, comprising providing at least one sidewall of a free-flowing hydrophobic aggregate adjacent to the underground wall of the structure.

244. The method of claim 243, further comprising protecting said sidewall of free-flowing hydrophobic aggregate by enclosing said sidewall in a protective structure.

245. The method of claim 243, further comprising refilling said sidewall of free-flowing hydrophobic aggregate, with time.

246. The method of claim 243, wherein said sidewall of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic bricks, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

247. The method of claim 246, wherein said protective encapsulation is made from a degradable material.

248. The method of claim 243, further comprising coating said underground wall of said structure with a waterproofing substance selected from the group consisting of a liquid and a paste.

249. The method of claim 243, wherein the structure is an existing structure, and said method is applied as a repair method.

250. The method of claim 243, wherein the structure is a new structure, and said method is applied during construction.

251. The method of claim 243, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected

so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

252. The method of claim 251, wherein said liquid is water.

253. The method of claim 251, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

254. The method of claim 251, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

255. The method of claim 254, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

256. The method of claim 254, wherein said inflatable particulates comprise a super absorbent polymer.

257. The method of claim 254, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

258. The method of claim 254, wherein said inflatable particulates comprises anti-caking agent.

259. The method of claim 251, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

260. The method of claim 251, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

261. The method of claim 251, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

262. The method of claim 251, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

263. The method of claim 251, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

264. The method of claim 243, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

265. The method of claim 264, wherein said hydrophobic material is a hydrophobic powder.

266. The method of claim 265, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

267. The method of claim 266, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

268. The method of claim 267, wherein said hydrocarbon is a residue of a fatty acid.

269. The method of claim 266, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

270. The method of claim 266, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

271. The method of claim 270, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

272. The method of claim 270, wherein said inflatable particulates comprise a super absorbent polymer.

273. The method of claim 270, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

274. The method of claim 270, wherein said inflatable particulates comprises anti-caking agent.

275. The method of claim 265, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

276. The method of claim 269, wherein said adherent layer is a water-based adherent layer.

277. The method of claim 276, wherein said water-based adherent layer comprises a water-based gluing agent.

278. The method of claim 269, wherein said adherent layer comprises a film-forming agent.

279. The method of claim 278, wherein said adherent layer further comprises a gluing agent.

280. The method of claim 266, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

281. The method of claim 265, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

282. A method of waterproofing a floor of a structure, comprising providing a bed of a free-flowing hydrophobic aggregate onto said structure and positioning the floor of the structure over said bed of said free-flowing hydrophobic aggregate.

283. The method of claim 282, wherein a thickness of said bed of said free-flowing hydrophobic aggregate is between 1 and 15 cm.

284. The method of claim 282, wherein a thickness of said bed of said free-flowing hydrophobic aggregate is between 4 and 7 cm.

285. The method of claim 282, further comprising protecting said bed of said free-flowing hydrophobic aggregate by enclosing said bed in a protective structure.

286. The method of claim 282, wherein said bed of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic bricks, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

287. The method of claim 286, wherein said protective encapsulation is made from a degradable material.

288. The method of claim 282, further comprising embedding a pipe in said bed of said free-flowing hydrophobic aggregate.

289. The method of claim 282, further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

290. The method of claim 282, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

291. The method of claim 290, wherein said liquid is water.

292. The method of claim 290, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

293. The method of claim 290, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

294. The method of claim 293, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

295. The method of claim 293, wherein said inflatable particulates comprise a super absorbent polymer.

296. The method of claim 293, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

297. The method of claim 293, wherein said inflatable particulates comprises anti-caking agent.

298. The method of claim 290, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

299. The method of claim 290, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

300. The method of claim 290, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

301. The method of claim 290, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

302. The method of claim 290, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

303. The method of claim 282, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

304. The method of claim 303, wherein said hydrophobic material is a hydrophobic powder.

305. The method of claim 304, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

306. The method of claim 305, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

307. The method of claim 306, wherein said hydrocarbon is a residue of a fatty acid.

308. The method of claim 305, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

309. The method of claim 305, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

310. The method of claim 309, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

311. The method of claim 309, wherein said inflatable particulates comprise a super absorbent polymer.

312. The method of claim 309, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

313. The method of claim 309, wherein said inflatable particulates comprises anti-caking agent.

314. The method of claim 304, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

315. The method of claim 308, wherein said adherent layer is a water-based adherent layer.

316. The method of claim 315, wherein said water-based adherent layer comprises a water-based gluing agent.

317. The method of claim 308, wherein said adherent layer comprises a film-forming agent.

318. The method of claim 317, wherein said adherent layer further comprises a gluing agent.

319. The method of claim 304, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

320. The method of claim 304, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

321. A method of waterproofing a roof of a structure, the roof having sidewalls, the method comprising:

applying a bed of a free-flowing hydrophobic aggregate on said roof; and

covering said bed of said free-flowing hydrophobic aggregate, to protect said bed.

322. The method of claim 321, wherein said covering comprises applying a floor over said bed of said free-flowing hydrophobic aggregate.

323. The method of claim 321, wherein said bed of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic bricks, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

324. The method of claim 323, wherein said protective encapsulation is made from a degradable material.

325. The method of claim 321, wherein a thickness of said bed of said free-flowing hydrophobic aggregate is between 1 and 15 cm.

326. The method of claim 321, wherein a thickness of said bed of said free-flowing hydrophobic aggregate is between 4 and 7 cm.

327. The method of claim 321, further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

328. The method of claim 321, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

329. The method of claim 328, wherein said liquid is water.

330. The method of claim 328, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

331. The method of claim 328, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

332. The method of claim 331, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

333. The method of claim 331, wherein said inflatable particulates comprise a super absorbent polymer.

334. The method of claim 331, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

335. The method of claim 331, wherein said inflatable particulates comprises anti-caking agent.

336. The method of claim 328, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

337. The method of claim 328, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

338. The method of claim 328, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

339. The method of claim 328, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

340. The method of claim 328, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

341. The method of claim 321, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

342. The method of claim 341, wherein said hydrophobic material is a hydrophobic powder.

343. The method of claim 342, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

344. The method of claim 342, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

345. The method of claim 344, wherein said hydrocarbon is a residue of a fatty acid.

346. The method of claim 343, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

347. The method of claim 343, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

348. The method of claim 347, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

349. The method of claim 347, wherein said inflatable particulates comprise a super absorbent polymer.

350. The method of claim 347, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

351. The method of claim 347, wherein said inflatable particulates comprises anti-caking agent.

352. The method of claim 342, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

353. The method of claim 346, wherein said adherent layer is a water-based adherent layer.

354. The method of claim 353, wherein said water-based adherent layer comprises a water-based gluing agent.

355. The method of claim 346, wherein said adherent layer comprises a film-forming agent.

356. The method of claim 355, wherein said adherent layer further comprises a gluing agent.

357. The method of claim 342, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

358. The method of claim 342, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

359. A method of waterproofing a reservoir, the method comprising:

placing a flooring bed of a free-flowing hydrophobic aggregate over a base of the reservoir; and

placing walls of said free-flowing hydrophobic aggregate over walls of the reservoir;

wherein at least one of said flooring bed and said walls of said free-flowing hydrophobic aggregate are covered by a protective structure designed and constructed to maintain said free-flowing hydrophobic aggregate in place.

360. The method of claim 359, wherein a thickness of said flooring bed of free-flowing hydrophobic aggregate is between 4 and 15 cm.

361. The method of claim 359, further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

362. The method of claim 359, wherein said protective structure is selected from the group consisting of tiles, geotechnic fabric, concrete, plastic and combination thereof.

363. The method of claim 359, wherein at least one of said flooring bed and said sidewalls of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic bricks, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

364. The method of claim 363, wherein said protective encapsulation is made from a degradable material.

365. The method of claim 359, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

366. The method of claim 365, wherein said liquid is water.

367. The method of claim 365, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

368. The method of claim 365, wherein said free-flowing hydrophobic aggregate further comprises inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

369. The method of claim 368, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

370. The method of claim 368, wherein said inflatable particulates comprise a super absorbent polymer.

371. The method of claim 368, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

372. The method of claim 368, wherein said inflatable particulates comprises anti-caking agent.

373. The method of claim 361, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

374. The method of claim 361, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

375. The method of claim 359, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

376. The method of claim 375, wherein said hydrophobic material is a hydrophobic powder.

377. The method of claim 376, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

378. The method of claim 377, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

379. The method of claim 378, wherein said hydrocarbon is a residue of a fatty acid.

380. The method of claim 377, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

381. The method of claim 377, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

382. The method of claim 381, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

383. The method of claim 381, wherein said inflatable particulates comprise a super absorbent polymer.

384. The method of claim 381, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

385. The method of claim 381, wherein said inflatable particulates comprises anti-caking agent.

386. The method of claim 376, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

387. The method of claim 380, wherein said adherent layer is a water-based adherent layer.

388. The method of claim 387, wherein said water-based adherent layer comprises a water-based gluing agent.

389. The method of claim 380, wherein said adherent layer comprises a film-forming agent.

390. The method of claim 389, wherein said adherent layer further comprises a gluing agent.

391. The method of claim 376, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

392. The method of claim 376, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

393. A method of protecting an object buried underground, the method comprising providing a free-flowing hydrophobic aggregate and surrounding the object by a layer of said free-flowing hydrophobic aggregate in a manner such that said layer of said free-flowing hydrophobic aggregate is interposed between the object and the ground.

394. The method of claim 393, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

395. The method of claim 394, wherein said liquid is water.

396. The method of claim 394, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the liquid.

397. The method of claim 394, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

398. The method of claim 397, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

399. The method of claim 397, wherein said inflatable particulates comprise a super absorbent polymer.

400. The method of claim 397, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

401. The method of claim 397, wherein said inflatable particulates comprises anti-caking agent.

402. The method of claim 394, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

403. The method of claim 394, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

404. The method of claim 394, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

405. The method of claim 394, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined acoustical isolation ability.

406. The method of claim 394, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

407. The method of claim 393, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

408. The method of claim 407, wherein said hydrophobic material is a hydrophobic powder.

409. The method of claim 408, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

410. The method of claim 409, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

411. The method of claim 410, wherein said hydrocarbon is a residue of a fatty acid.

412. The method of claim 409, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

413. The method of claim 409, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

414. The method of claim 413, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

415. The method of claim 413, wherein said inflatable particulates comprise a super absorbent polymer.

416. The method of claim 413, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

417. The method of claim 413, wherein said inflatable particulates comprises anti-caking agent.

418. The method of claim 408, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

419. The method of claim 412, wherein said adherent layer is a water-based adherent layer.

420. The method of claim 419, wherein said water-based adherent layer comprises a water-based gluing agent.

421. The method of claim 412, wherein said adherent layer comprises a film-forming agent.

422. The method of claim 421, wherein said adherent layer further comprises a gluing agent.

423. The method of claim 408, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

424. The method of claim 408, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

425. A hydrophobic composition for protecting an underground object, comprising a thermally conductive free-flowing hydrophobic aggregate and a dielectric free-flowing hydrophobic aggregate, said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate being mixed in a predetermined ratio selected so as to electrically isolate the underground object while allowing transportation of heat therefrom.

426. The hydrophobic composition of claim 425, wherein the underground object is selected from the group consisting of an underground electrical cable, an underground electrical wire, an underground communication cable and an underground communication wire.

427. The hydrophobic composition of claim 425, wherein at least one of said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

428. The hydrophobic composition of claim 427, wherein said hydrophobic material is a hydrophobic powder.

429. The hydrophobic composition of claim 428, wherein said hydrophobic powder has a distinguishable color.

430. The hydrophobic composition of claim 428, wherein said particulated core material is further coated by a coloring coat.

431. The hydrophobic composition of claim 430, wherein said coloring coat is water resistant.

432. The hydrophobic composition of claim 425, further comprising inflatable particulates size wise compatible with capillaries formed between particulates of said thermally conductive free-flowing hydrophobic aggregate and/or said dielectric free-flowing hydrophobic aggregate, said inflatable particulates being capable of absorbing fluid.

433. The hydrophobic composition of claim 432, wherein an absorption capability of said inflatable particulates is from about 100 to about 5000 by weight.

434. The hydrophobic composition of claim 432, wherein a freezing temperature of said inflatable particulates below about –20 degrees centigrade, both in an inflated state and in a deflated state of said inflatable particulates.

435. The hydrophobic composition of claim 432, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

436. The hydrophobic composition of claim 432, wherein a diameter of said inflatable particulates is from about 1 micrometer to about 1000 micrometers.

437. The hydrophobic composition of claim 432, wherein said inflatable particulates comprise a super absorbent polymer.

438. The hydrophobic composition of claim 432, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

439. The hydrophobic composition of claim 432, wherein said inflatable particulates comprises anti-caking agent.

440. The hydrophobic composition of claim 428, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

441. The hydrophobic composition of claim 440, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

442. The hydrophobic composition of claim 441, wherein said hydrocarbon is a residue of a fatty acid.

443. The hydrophobic composition of claim 428, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

444. The hydrophobic composition of claim 443, wherein said adherent layer is a water-based adherent layer.

445. The hydrophobic composition of claim 444, wherein said water-based adherent layer comprises a water-based gluing agent.

446. The hydrophobic composition of claim 443, wherein said adherent layer comprises a film-forming agent.

447. The hydrophobic composition of claim 446, wherein said adherent layer further comprises a gluing agent.

448. The hydrophobic composition of claim 428, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

449. The hydrophobic composition of claim 428, further comprising at least one additive selected from the group consisting of a UV resistant agent, a bleaching agent and an abrasive agent.

450. The hydrophobic composition of claim 428, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

451. The hydrophobic composition of claim 425, wherein at least one of said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates.

452. The hydrophobic composition of claim 451, wherein at least one of a size distribution of said differently sized particulates, a contact angle between a liquid and said differently sized particulates and a characteristic distance between adjacent particulates is selected so that when a layer of the hydrophobic composition is in

contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of said liquid through the hydrophobic composition is prevented.

453. The hydrophobic composition of claim 452, wherein said liquid is water.

454. The hydrophobic composition of claim 452, wherein said layer has a thickness from about 1 cm to about 10 cm and further wherein said predetermined maximal pressure is equivalent to a column of water having a height above 30 cm.

455. The hydrophobic composition of claim 452, wherein said size distribution is characterized by a variance ranging from 1 micrometer to 1400 micrometer.

456. The hydrophobic composition of claim 452, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the predetermined maximal pressure of the liquid.

457. The hydrophobic composition of claim 452, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is from 1 nanometer to 500 nanometers.

458. A method of protecting an underground object, the method comprising:

providing a hydrophobic composition having a thermally conductive free-flowing hydrophobic aggregate and a dielectric free-flowing hydrophobic aggregate; and

surrounding the object by a layer of said hydrophobic composition in a manner such that said layer of said hydrophobic composition is interposed between the object and the ground;

said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate being mixed in a predetermined ratio

selected so as to electrically isolate the underground object while allowing transportation of heat therefrom.

459. The method of claim 458, wherein the underground object is selected from the group consisting of an underground electrical cable, an underground electrical wire, an underground communication cable and an underground communication wire.

460. The method of claim 458, wherein at least one of said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

461. The method of claim 460, wherein said hydrophobic material is a hydrophobic powder.

462. The method of claim 461, wherein said hydrophobic powder has a distinguishable color.

463. The method of claim 461, wherein said particulated core material is further coated by a coloring coat.

464. The method of claim 463, wherein said coloring coat is water resistant.

465. The method of claim 458, wherein said hydrophobic composition further comprises inflatable particulates, size wise compatible with capillaries formed between particulates of said thermally conductive free-flowing hydrophobic aggregate and/or said dielectric free-flowing hydrophobic aggregate, said inflatable particulates being capable of absorbing fluid.

466. The method of claim 465, wherein an absorption capability of said inflatable particulates is from about 100 to about 5000 by weight.

467. The method of claim 465, wherein a freezing temperature of said inflatable particulates below about –20 degrees centigrade, both in an inflated state and in a deflated state of said inflatable particulates.

468. The method of claim 465, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

469. The method of claim 465, wherein a diameter of said inflatable particulates is from about 1 micrometer to about 1000 micrometers.

470. The method of claim 465, wherein said inflatable particulates comprise a super absorbent polymer.

471. The method of claim 465, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

472. The method of claim 465, wherein said inflatable particulates comprises anti-caking agent.

473. The method of claim 461, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

474. The method of claim 473, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

475. The method of claim 474, wherein said hydrocarbon is a residue of a fatty acid.

476. The method of claim 461, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

477. The method of claim 476, wherein said adherent layer is a water-based adherent layer.

478. The method of claim 477, wherein said water-based adherent layer comprises a water-based gluing agent.

479. The method of claim 476, wherein said adherent layer comprises a film-forming agent.

480. The method of claim 479, wherein said adherent layer further comprises a gluing agent.

481. The method of claim 461, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

482. The method of claim 461, wherein said hydrophobic composition further comprises at least one additive selected from the group consisting of a UV resistant agent, a bleaching agent and an abrasive agent.

483. The method of claim 461, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

484. The method of claim 458, wherein at least one of said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates.

485. The method of claim 484, wherein at least one of a size distribution of said differently sized particulates, a contact angle between a liquid and said differently sized particulates and a characteristic distance between adjacent particulates is selected so that when a layer of said hydrophobic composition is in contact with a liquid having

a pressure lower than or equal to a predetermined maximal pressure, percolation of said liquid through said hydrophobic composition is prevented.

486. The method of claim 485, wherein said liquid is water.

487. The method of claim 485, wherein said layer has a thickness from about 1 cm to about 10 cm and further wherein said predetermined maximal pressure is equivalent to a column of water having a height above 30 cm.

488. The method of claim 485, wherein said size distribution is characterized by a variance ranging from 1 micrometer to 1400 micrometer.

489. The method of claim 485, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the predetermined maximal pressure of the liquid.

490. The method of claim 485, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is from 1 nanometer to 500 nanometers.

491. A method of manufacturing a hydrophobic composition for protecting an underground object, the method comprising

providing a thermally conductive free-flowing hydrophobic aggregate;

providing a dielectric free-flowing hydrophobic aggregate; and

mixing said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate in a predetermined ratio;

said predetermined ratio being selected so as to allow electrical isolation of the underground object and transportation of heat therefrom.

492. The method of claim 491, wherein the underground object is selected from the group consisting of an underground electrical cable, an underground electrical wire, an underground communication cable and an underground communication wire.

493. The method of claim 491, wherein at least one of said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

494. The method of claim 493, wherein said hydrophobic material is a hydrophobic powder.

495. The method of claim 494, wherein said hydrophobic powder has a distinguishable color.

496. The method of claim 494, wherein said particulated core material is further coated by a coloring coat.

497. The method of claim 496, wherein said coloring coat is water resistant.

498. The method of claim 491, further comprising mixing said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate with inflatable particulates being size wise compatible with capillaries formed between particulates of said thermally conductive free-flowing hydrophobic aggregate and/or said dielectric free-flowing hydrophobic aggregate, said inflatable particulates being capable of absorbing fluid.

499. The method of claim 498, wherein an absorption capability of said inflatable particulates is from about 100 to about 5000 by weight.

500. The method of claim 498, wherein a freezing temperature of said inflatable particulates below about –20 degrees centigrade, both in an inflated state and in a deflated state of said inflatable particulates.

501. The method of claim 498, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

502. The method of claim 498, wherein a diameter of said inflatable particulates is from about 1 micrometer to about 1000 micrometers.

503. The method of claim 498, wherein said inflatable particulates comprise a super absorbent polymer.

504. The method of claim 498, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

505. The method of claim 498, wherein said inflatable particulates comprises anti-caking agent.

506. The method of claim 494, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

507. The method of claim 506, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

508. The method of claim 507, wherein said hydrocarbon is a residue of a fatty acid.

509. The method of claim 494, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

510. The method of claim 509, wherein said adherent layer is a water-based adherent layer.

511. The method of claim 510, wherein said water-based adherent layer comprises a water-based gluing agent.

512. The method of claim 509, wherein said adherent layer comprises a film-forming agent.

513. The method of claim 512, wherein said adherent layer further comprises a gluing agent.

514. The method of claim 494, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

515. The method of claim 494, further comprising mixing said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate with at least one additive selected from the group consisting of a UV resistant agent, a bleaching agent and an abrasive agent.

516. The method of claim 494, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

517. The method of claim 491, wherein at least one of said thermally conductive free-flowing hydrophobic aggregate and said dielectric free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates.

518. The method of claim 517, wherein at least one of a size distribution of said differently sized particulates, a contact angle between a liquid and said differently sized particulates and a characteristic distance between adjacent particulates is selected so that when a layer of the hydrophobic composition is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of said liquid through the hydrophobic composition is prevented.

519. The method of claim 518, wherein said liquid is water.

520. The method of claim 518, wherein said layer has a thickness from about 1 cm to about 10 cm and further wherein said predetermined maximal pressure is equivalent to a column of water having a height above 30 cm.

521. The method of claim 518, wherein said size distribution is characterized by a variance ranging from 1 micrometer to 1400 micrometer.

522. The method of claim 518, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is suitable for repealing the predetermined maximal pressure of the liquid.

523. The method of claim 518, wherein said size distribution is selected so that a maximal diameter of capillaries formed between said particulates is from 1 nanometer to 500 nanometers.

524. A method of preparing an area for plants cultivating, comprising providing a bed of a free-flowing hydrophobic aggregate onto the area and covering said bed of a free-flowing hydrophobic aggregate by a layer of soil, thereby preparing an area for plants cultivating.

525. The method of claim 524, wherein said bed of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic patches, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

526. The method of claim 525, wherein said protective encapsulation is made from a degradable material.

527. The method of claim 525, wherein said hydrophobic patches are arranged such that at least one space is formed between adjacent hydrophobic patches.

528. The method of claim 524, wherein said further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

529. The method of claim 524, further comprising covering said bed of said free-flowing hydrophobic aggregate by a super absorbent polymer.

530. The method of claim 524, further comprising positioning at least one water collection channel for allowing conveyance of water into said soil.

531. The method of claim 524, further comprising surrounding said layer of soil by a protective barrier.

532. The method of claim 531, wherein said protective barrier comprises said free-flowing hydrophobic aggregate.

533. The method of claim 524, wherein said bed of free-flowing hydrophobic aggregate is designed and constructed to facilitate desalination of non-desalted water present thereunder, said desalination being effected by passage of desalted vapors of said non-desalted water through said bed of said free-flowing hydrophobic aggregate.

534. The method of claim 524, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

535. The method of claim 534, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

536. The method of claim 535, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

537. The method of claim 535, wherein said inflatable particulates comprise a super absorbent polymer.

538. The method of claim 535, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

539. The method of claim 535, wherein said inflatable particulates comprises anti-caking agent.

540. The method of claim 534, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

541. The method of claim 534, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

542. The method of claim 534, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

543. The method of claim 534, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

544. A method of preparing a salt-free area on a salty soil, comprising providing a bed of a free-flowing hydrophobic aggregate onto the salty soil and covering said bed of said free-flowing hydrophobic aggregate by non-salty soil, thereby preparing the salt-free area.

545. The method of claim 544, wherein said further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

546. The method of claim 544, further comprising covering said bed of free-flowing hydrophobic aggregate by a super absorbent polymer.

547. The method of claim 544, wherein said bed of free-flowing hydrophobic aggregate is designed and constructed to facilitate desalination of non-desalted water present thereunder, said desalination being effected by passage of desalted vapors of said non-desalted water through said bed of said free-flowing hydrophobic aggregate.

548. The method of claim 544, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

549. The method of claim 548, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

550. The method of claim 549, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

551. The method of claim 549, wherein said inflatable particulates comprise a super absorbent polymer.

552. The method of claim 549, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

553. The method of claim 549, wherein said inflatable particulates comprises anti-caking agent.

554. The method of claim 548, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

555. The method of claim 548, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

556. The method of claim 548, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

557. The method of claim 548, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

558. A hydrophobic composite comprising a core material coated by a hydrophobic material, said hydrophobic material being bonded to said core material via a water-based adherent layer.

559. The hydrophobic composite of claim 558, wherein said water-based adherent layer comprises a water-based gluing agent.

560. The hydrophobic composite of claim 559, wherein said water-based gluing agent is a bitumen-latex paste.

561. The hydrophobic composite of claim 558, wherein said hydrophobic material is selected from the group consisting of a hydrophobic powder comprising at least one impure element having a hydrocarbon chain attached thereto, hydrophobic fumed silica, molten polypropylene, and any mixture thereof.

562. The hydrophobic composite of claim 561, wherein said hydrocarbon chain comprises at least 10 carbon atoms.

563. The hydrophobic composite of claim 561, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

564. The hydrophobic composite of claim 563, wherein said hydrocarbon is a residue of a fatty acid having at least 12 carbon atoms.

565. The hydrophobic composite of claim 564, wherein said fatty acid is selected from the group consisting of stearic acid, lauric acid, myristic acid, palmitic acid, oleic acid, linolenic acid and arachidonic acid.

566. The hydrophobic composite of claim 561, wherein said element is selected from the group consisting of a metallic element, a semi-metallic element and a transition metallic element.

567. The hydrophobic composite of claim 561, wherein said at least one element is selected from the group consisting of magnesium, calcium, aluminum, zinc, sodium, barium, zirconium, manganese, titanium, vanadium, chromium, iron and combinations thereof.

568. The hydrophobic composite of claim 561, wherein said hydrophobic powder has an average particle size ranging between 0.02 micron and 50 microns.

569. The hydrophobic composite of claim 561, wherein said hydrophobic powder has a surface area ranging between 1 m^2/gram and 60 m^2/gram.

570. The hydrophobic composite of claim 558, wherein said core material is selected from the group consisting of a particulate material and a granulate material.

571. The hydrophobic composite of claim 558, wherein said core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

572. The hydrophobic composite of claim 570, wherein said core material has an average particle size ranging between 25 millimeters and 5 microns.

573. The hydrophobic composite of claim 571, wherein said core material is quartz sand.

574. The hydrophobic composite of claim 561, wherein said hydrophobic material comprises a mixture of said hydrophobic powder and said hydrophobic fumed silica.

575. The hydrophobic composite of claim 574, wherein said hydrophobic fumed silica constitutes between 1 and 99 weight percentages of said hydrophobic powder.

576. The hydrophobic composite of claim 558, wherein said adherent layer constitutes between about 0.5 and about 7 weight percentages of the hydrophobic composite.

577. The hydrophobic composite of claim 558, wherein said hydrophobic material constitutes between about 0.1 and about 5 weight percentages of the hydrophobic composite.

578. The hydrophobic composite of claim 558, further comprising at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

579. A method of preparing the hydrophobic composite of claim 558, the method comprising:

admixing a core material and an aqueous adherent mixture including a water-based gluing agent and an aqueous solvent;

removing said aqueous solvent to thereby to thereby provide said core material having applied thereon said water-based adherent layer; and

coating said core material having applied thereon said water-based adherent layer with said hydrophobic material, thereby providing said hydrophobic composite.

580. The method of claim 579, wherein a concentration of said water-based gluing agent in said aqueous adherent mixture ranges between about 1 weight percentage and about 99 weight percentages.

581. The method of claims 100, further comprising drying said core material prior to said admixing.

582. The method of claims 100, further comprising drying said core material having applied thereon said water-based adherent layer prior to said coating.

583. The method of claim 579, further comprising, after said coating, curing said hydrophobic composite.

584. The method of claim 583, wherein said curing is performed for a time period ranging between 1 and 30 days.

585. The method of claim 579, wherein removing said aqueous solvent is performed by tumble drying.

586. The method of claim 579, further comprising, prior to said coating, admixing said core material having thereon said water-based adherent layer with an additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.

587. The method of claim 579, wherein said core material is selected from the group consisting of a particulate material and a granulate material.

588. The method of claim 587, wherein said core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt,

quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

589. The method of claim 587, wherein said core material has an average particle size ranging between 25 millimeters and 5 microns.

590. The method of claim 588, wherein said core material is quartz sand.

591. The method of claim 579, wherein said water-based adherent layer constitutes between about 0.5 and about 7 weight percentages of said hydrophobic composite.

592. The method of claim 579, wherein said hydrophobic material constitutes between about 0.1 and about 5 weight percentages of said hydrophobic composite.

593. A plant cultivating method, comprising:

providing a bed of a free-flowing hydrophobic aggregate an area;

covering said bed of a free-flowing hydrophobic aggregate by a layer of soil;

planting a plant in said layer of soil; and

applying aqueous liquid under said bed of a free-flowing hydrophobic aggregate thereby cultivating the plant.

594. The method of claim 593, wherein said aqueous liquid is salty water.

595. The method of claim 593, wherein said bed of said free-flowing hydrophobic aggregate comprises an arrangement of hydrophobic patches, each being a protective encapsulation having a predetermined shape and encapsulating said free-flowing hydrophobic aggregate.

596. The method of claim 595, wherein said protective encapsulation is made from a degradable material.

597. The method of claim 595, wherein said hydrophobic patches are arranged such that at least one space is formed between adjacent hydrophobic patches.

598. The method of claim 593, wherein said further comprising mixing said free-flowing hydrophobic aggregate with lightweight aggregates.

599. The method of claim 593, further comprising covering said bed of said free-flowing hydrophobic aggregate by a super absorbent polymer.

600. The method of claim 593, further comprising positioning at least one water collection channel for allowing conveyance of water under said bed of said free-flowing hydrophobic aggregate.

601. The method of claim 593, further comprising surrounding said layer of soil by a protective barrier.

602. The method of claim 601, wherein said protective barrier comprises said free-flowing hydrophobic aggregate.

603. The method of claim 593, wherein said bed of free-flowing hydrophobic aggregate is designed and constructed to facilitate desalination of non-desalted water present thereunder, said desalination being effected by passage of desalted vapors of said non-desalted water through said bed of said free-flowing hydrophobic aggregate.

604. The method of claim 593, wherein said free-flowing hydrophobic aggregate comprises a plurality of differently sized particulates, and further wherein at least one of a size distribution of said particulates, a contact angle between a liquid and said particulates and a characteristic distance between adjacent particulates is selected so that when the free-flowing hydrophobic aggregate is in contact with a liquid having a pressure lower than or equal to a predetermined maximal pressure, percolation of the liquid through the free-flowing hydrophobic aggregate is prevented.

605. The method of claim 604, further comprising inflatable particulates size wise compatible with capillaries formed between said particulates and capable of absorbing the fluid.

606. The method of claim 605, wherein said inflatable particulates, when in a deflated state, constitute less than 2 percent of the free-flowing hydrophobic aggregate by volume.

607. The method of claim 605, wherein said inflatable particulates comprise a super absorbent polymer.

608. The method of claim 605, wherein said inflatable particulates comprises sodium being cross linked with polyacrylic acid.

609. The method of claim 605, wherein said inflatable particulates comprises anti-caking agent.

610. The method of claim 604, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a predetermined specific weight.

611. The method of claim 604, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by a minimal absorption capability.

612. The method of claim 604, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is characterized by predetermined thermal properties.

613. The method of claim 604, wherein said size distribution is selected so that the free-flowing hydrophobic aggregate is capable of allowing evaporation of liquid.

614. A method of storing a container containing an oily substance, the method comprising positioning the container in a dike and surrounding the container by a layer of a free-flowing hydrophobic aggregate in a manner such that said layer of said free-flowing hydrophobic aggregate is interposed between the container and the ground.

615. The method of claim 614, wherein said free-flowing hydrophobic aggregate is selected so as to allow absorption of the oily substance.

616. The method of claim 614, wherein the oily substance is petrol.

617. The method of claim 615, further comprising positioning sensors sensitive to the oily substance in said dike and covering said sensors by said free-flowing hydrophobic aggregate, so as to prevent water from reaching said sensors.

618. The method of claim 614, wherein said free-flowing hydrophobic aggregate comprises a particulated core material coated by a hydrophobic material.

619. The method of claim 618, wherein said hydrophobic material is a hydrophobic powder.

620. The method of claim 619, wherein said hydrophobic powder comprises at least one impure element having a hydrocarbon chain attached thereto.

621. The method of claim 620, wherein said hydrocarbon chain is covalently attached to said at least one impure element.

622. The method of claim 621, wherein said hydrocarbon is a residue of a fatty acid.

623. The method of claim 620, wherein said hydrophobic powder is bonded to said particulated core material via an adherent layer.

624. The method of claim 620, wherein said hydrophobic powder comprises inflatable particulates capable of absorbing fluid when being in contact therewith.

625. The method of claim 619, wherein said particulated core material is selected from the group consisting of sand, gravel, slag, porcelanit, dolomite, porcelain, basalt, quartz sand, coal ash, chalk, zeolite, montmorillonite, agapultite, flint, bentonite, perlite, mica, wood chips, nut shells, sawdust and combinations thereof.

626. The method of claim 619, wherein said hydrophobic powder further comprises hydrophobic fumed silica.

627. The method of claim 619, wherein said free-flowing hydrophobic aggregate further comprises at least one additive selected from the group consisting of a coloring agent, a UV resistant agent, a bleaching agent and an abrasive agent.